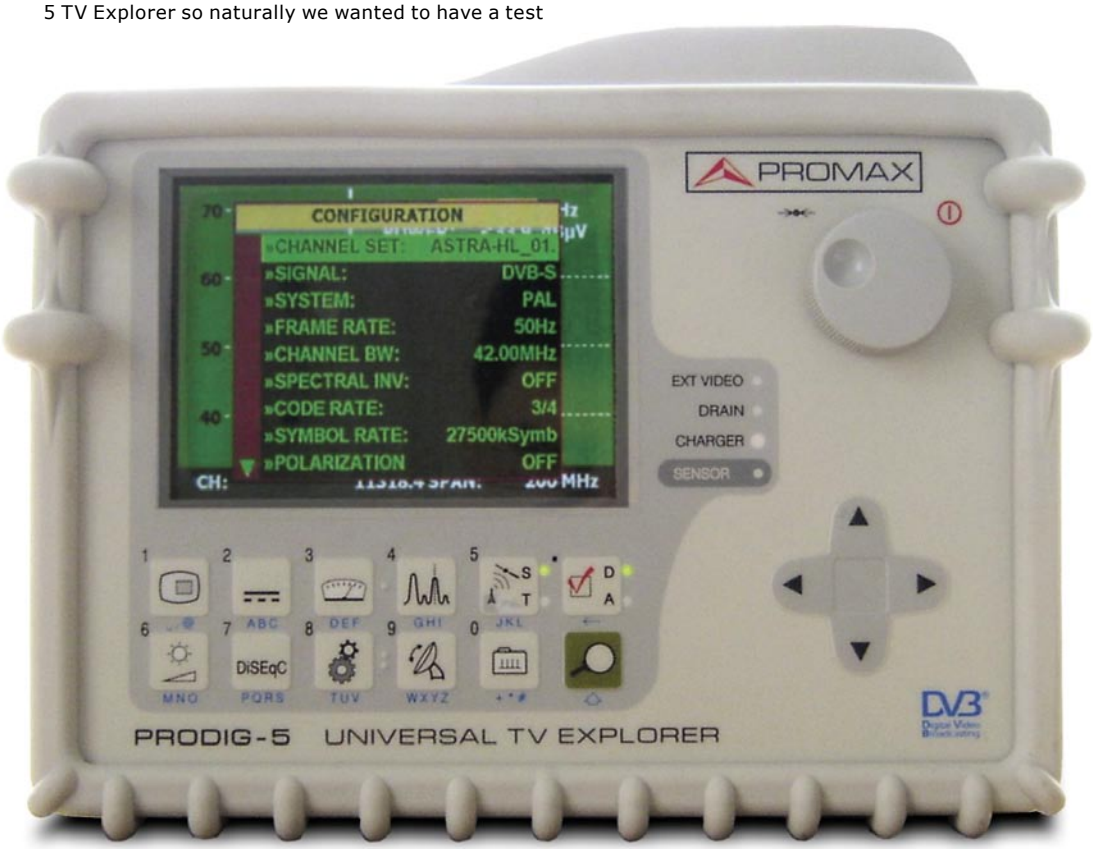
Promax TV Explorer

Small All-in-One Unit

Large, Heavy and Expensive: these are words that most of you have up until now used whenever the subject signal analyzer comes up. The fact that it doesn't always have to be this way was demonstrated by the Spanish company Promax. Not long ago we were told about their newest model Prodig 5 TV Explorer so naturally we wanted to have a test sample sent to us right away. The package we were waiting for arrived just a few days ago. We quickly unpacked everything and placed the 23x16x7.6 cm analyzer on the table. We were used to seeing analyzers that were twice the size and at a weight of only 1.9 kg, it was a true featherweight.



As expected from Promax, this unit's workmanship left us with a very good impression. The chassis is surrounded by rubber to help protect it from damage while at the same time allowing it to be easily stood up. Also included in the package was a plastic carrying case to help protect it from moisture and dirt, a power supply, a charger cable for a vehicle as well as a variety of adapter plugs and a user manual written in English, French and Spanish.

Despite its light weight, the built-in Li battery can power the Prodig-5 for up to 3.5 hours. This is an exceptionally long time compared to some of its larger brothers.

The front panel sports a 5-inch TFT color display, four status LED's, a set of up/down/left/right arrow buttons plus a set of 12 pushbuttons to control the analyzers various functions. Naturally, the buttons are designed so that moisture and dirt cannot get behind them. An adjustment knob is used for varying the frequency and is also used as the on/off switch. The antenna connector can be found on the top of the unit and can be used not only for satellite signals but also for terrestrial and cable signals. The manufacturer even thought to include a Scart connector on the left side of the box through which the output of the actual display signal is available and also external signals can be connected. An RS-232 port on the rear panel for sending measurement results to a PC and for uploading new software is also included. Unfortunately, the included user manual seemed somewhat lean and only gave a brief description of the unit's more important features.

Everyday Use

Promax wanted to take advantage of the increasing digitalization and thus paid very close attention to the receiver's digital DVB-S, DVB-C and DVB-T compatibility. An analog terrestrial tuner is also included that happens to support the PAL, NTSC and SECAM TV standards. The OSD (on-screen display) is available in English, German, Spanish, French and Italian while an integrated light sensor automatically controls the displays contrast and brightness for optimum readability.

After looking over the handbook for a short time, every user should become familiar with the elementary functions of the easy-to-read and self-explanatory buttons. If you want to take advantage of all of the TV Explorer's functions, you will have to do plenty of "learn-by-doing" since the user manual won't be able to answer too many detailed questions.

Of course the first step would be to select the type of signal you would like to measure. From there you go to the spectrum analyzer display. With analog terrestrial signals as well as with DVB-T and DVB-C signals, active channels would immediately be visible as peaks on the display. In satellite reception mode the correct switching voltage must first be selected as does the proper band and any DiSEqC parameters must also be chosen. The TV Explorer can supply 5V, 13V, 15V, 18V, 24V as well as 13V and 18V in combination with a 22 kHz signal. If necessary, the analyzer can switch to an external source of power.

The TV Explorer can display the actual power usage of the LNB or multiswitch; an especially interesting feature. The DiSEqC 1.0 protocol is included for multifeed systems as DiSEqC 1.2 for motorized antennas. DiSEqC 1.1 and 1.3 (USALS) are unfortunately not supported.

The spectrum display of the TV Explorer is available in two different modes. In the first mode the display acts at a reduced speed with an overall picture generated at a slower measurement speed that may not show every weak signal. In the Align Mode, the spectrum display is initially generated and then kept up to date at a much faster pace thereby making it ideal for precise adjustments. Additionally, in this mode the signal strength can also be presented audibly. The arrow buttons can be used to zoom in on individual frequency ranges or reposition the y-axis of the signal strength display.

Once the initial settings have been taken care of, the first frequency can be selected that can later be looked at much more closely. Frequency selection is handled either by the control knob or by direct entry using the integrated 10-button keypad. The frequency entered can be either the downlink frequency or the transponder IF. With terrestrial signals it can be as simple as entering in the correct channel number. In digital mode a push

of the Scan button is enough for the TV Explorer to attempt to find more information on the selected transponder/frequency. If it's an analog signal, the unit will recognize this and indicate this by lighting the corresponding status LED.

Since there is no integrated analog satellite tuner, picture and sound can only be displayed in terrestrial mode. In satellite mode, only measurement data is displayed. If it's a digital transponder, the automatic scan function of the TV Explorer comes into play. In just a short time the symbolrate, FEC and other critical data of the transponder is identified. With a push of the TV button, the PMT's are read, the channel list is displayed and the first receivable channel is presented. The TV Explorer uses an easy-to-read Info bar to display not only information such as PID's and resolution but also the actual measured datarate, the service provider as well as any encryption used by the channel.

This makes it easy to identify what satellite you happened to land on while adjusting the antenna. Otherwise it would also help to have a quick look at a frequency list such as can be found at www.satcodx.com.

The TV Explorer supports the measurements of VBER, C/N, signal strength, MER and CBER to help with any fine tuning adjustments. The VBER measurement indicates the number of error bits after Viterbi error correction while the C/N (carrier-to-noise ratio) indicates the noise figure. MER is the modulation error rate and CBER is the number of error bits after error correction. All of this data can be displayed in an easy-to-read graphic while the other values are minimized and placed near the bottom of the display.

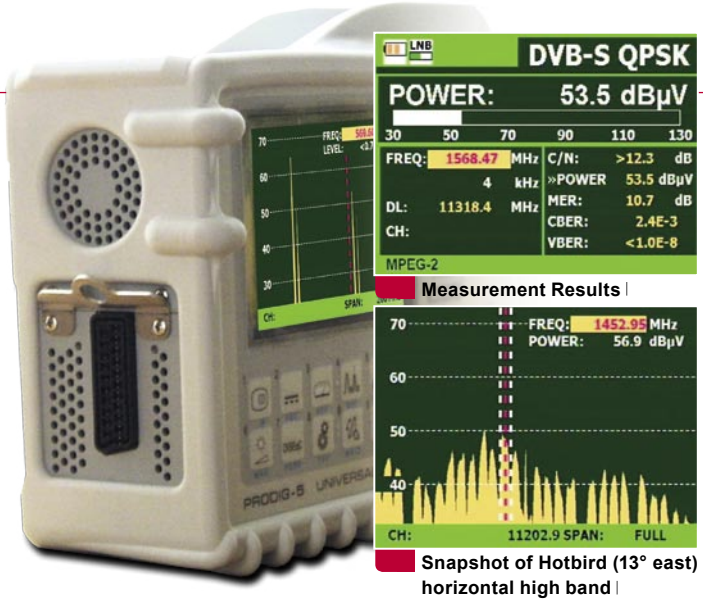
To help make things even easier, the user can set up a number of different satellite profiles (several are already preprogrammed into the unit). This takes some of the guesswork out of setting up a multifeed system on multiple connectors since the TV Explorer by using the stored profiles will automatically adjust for the correct DiSEqC, polarization and band settings.

In addition to this box being used as an analyzer, the TV Explorer would also make an interesting tool for the diehard feedhunter. Thanks to the spectrum display, new signals can be found as soon as they appear and with the help of the Autoscan function can be recognized and identified. Aside from picture and audio, all of the signal's critical data such as PID's, FEC, symbolrate, resolution, datarate, TV standard, etc., are displayed on the screen. Unfortunately, the display of MPEG 4:2:2 signals is not possible. The handling of DVB-T and DVB-C signals as well as analog terrestrial signals is just as simple and professionally done. The capabilities of the small TV Explorer seem to be unlimited here as well.

To properly test the TV Explorer we hooked it up to a USALS antenna and were very much amazed. Through its light weight and small size and also its handy carrying case, this unit (contrary to its larger cousins) is perfect for antenna alignment in hard to reach localities. Since the analyzer is not DiSEqC 1.3 compatible, we simply used an FTA receiver with integrated USALS and routed the video signal to the analyzer through the built-in Scart connector. With a push of a button we were able to switch back and forth between our measurement results and the FTA receiver. It doesn't get any easier than this.

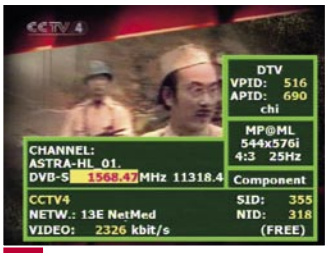
We also have to give praise to the manufacturer's competent and quick-to-respond technical support team. After posing a technical question anonymously, we are happy to say that we got the desired and, above all, correct answer within 24 hours.

There's no doubt: the TV Explorer will be the tool of choice in the TELE-satellite test center in the future.

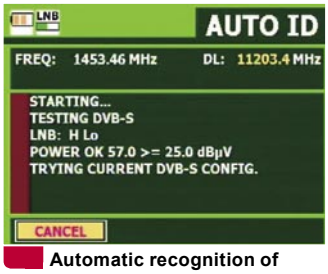


Measurement Results

Snapshot of Hotbird (13° east) horizontal high band



Signal display in DVB-S modes



Automatic recognition of symbolrate and FEC

TECHNIC DATA

Manufacturer	Promax Electronica, S. A., Barcelona, Spain
E-mail	promax@promax.es
Tel	+34-93-260 20 02
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Model	Prodig-5 TV Explorer
Function	Professional Digital/Analog TV, Satellite, Cable Signal Analyzer
Frequency Range	Band 1: 45-865 MHz
	Band 2: 950-2150 MHz
Measurement Range	Terrestrial: 10-120 dBuV
	Satellite: 30-120 dBuV
Accuracy	Terrestrial: +/- 1.5 dB
	Satellite: +/- 2.5 dB
Monitor	5" TFT Color Screen
Color Systems	PAL, NTSC, SECAM
TV Standards	M, N, B, G, I, D, K and L
QPSK Symbolrates	2-45 Msps
Power Supply	Li-Ion 7.2V/11Ah
	3.5 hours Operation without Recharge
	3.0 hours Recharging Time
Operating Temperature	5-40°C

Expert conclusion

Thomas Haring
TELE-satellite
Test Center
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The TV Explorer is an exceptionally handy, lightweight and compact analyzer that comes with everything you'd expect in a modern piece of test equipment. It has no trouble handling any kind of digital signal and can also deal with analog terrestrial signals as well. It is easy and logical to operate and should there ever be a problem, the manufacturer's first class technical support team is there to help. The TV Explorer would not only be a tool for the professional; it would also be an excellent addition to the test equipment rack of any satellite hobbyist.

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The user manual only provides a general overview of the TV Explorer's basic functions. The manufacturer should consider making some improvements here.

	Measurement Mode	Antenna align Mode
	(ms)	
Terrestrial		
8 MHz	210	122
16 MHz	264	188
32 MHz	440	114
50 MHz	242	90
100 MHz	462	138
200 MHz	510	228
500 MHz	632	280
Full	932	257
Satellite		
16 MHz	144	144
32 MHz	348	144
50 MHz	348	348
100 MHz	416	228
200 MHz	600	224
500 MHz	610	352
Full	714	470

Sampling rates of the TV Explorer spectrum analyzer